

CLAIMS

1. A method for controlling the amount of information in retransmission data packets transmitted from a transmitting entity to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data, the method comprising the steps of:

transmitting a data packet from the transmitting entity to the receiving entity, and

receiving a feedback message from the receiving entity at the transmitting entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity,

characterized by further comprising the steps of

in case the feedback message indicates that the data packet has not been received successfully, receiving a control message at the transmitting entity for the unsuccessfully received data packet, wherein the control message restricts the amount of information to be sent in the retransmission data packet for the unsuccessfully received data packet, and

transmitting a retransmission data packet from the transmitting entity to the receiving entity comprising an amount of information indicated in said control message.
2. The method according to claim 1, **characterized in that** control message indicates the maximum and minimum amount of information or a maximum amount of information in the retransmission data packet.
3. The method according to claim 1 or 2, **characterized in that** the transmission of the indicated amount of information requires a reduced transmission power compared to the transmission power used for the data packet.
4. The method according to one of claims 1 to 3, **characterized in that** the control message is transmitted in parallel or delayed to the feedback message from the receiving entity to the transmitting entity.

5. The method according to one of claims 1 to 4, **characterized in that** the feedback message is transmitted via an acknowledgment channel and the control message is transmitted via a scheduling related control channel.
6. The method according to one of claims 1 to 5, **characterized in that** the retransmission data packet is transmitted by the transmitting entity after a predetermined time span upon having received said feedback message.
7. The method according to claim 6, **characterized in that** control message indicates not to transmit the retransmission data packet after a predetermined time span upon having received said feedback message
8. The method according to one of claims 1 to 7, **characterized in that** the control message is a TFC control message.
9. The method according to one of claims 1 to 8, **characterized by** further comprising the step of soft combining the retransmission data packet and the transmitted data packet at the receiving entity at the receiving entity to obtain a combined data packet.
10. The method according to claim 9, **characterized by** further comprising the step decoding the combined data packet at the receiving entity.
11. The method according to claim 10, **characterized in that** the transmitted control message indicates the retransmission data packet's amount of information necessary for successfully decoding of the combined data packet.
12. The method according to one of claims 1 to 11, **characterized by** further comprising the step of determining the amount of information for the retransmission data packet at the receiving entity based on the reception quality of the data packet or the combined data packet.
13. The method according to one of claims 1 to 12, **characterized by** further comprising the step of transmitting said data packet via a first data channel from the transmitting entity to the receiving entity, and

in that said retransmission data packet is transmitted via a second data channel from the transmitting entity to the receiving entity.

14. The method according to claim 13, **characterized in that** transmission time interval of the first data channel is smaller than the transmission time interval of the second data channel.
15. The method according to one of claims 1 to 14, **characterized in that** the transmitted data packet and the retransmission data packet are transmitted via at least one dedicated transport channel.
16. A receiving entity for receiving data packets from a transmitting entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data, the receiving entity comprising:
- receiving means for receiving a data packet from the transmitting entity, and
- transmitting means for transmitting a feedback message to the transmitting entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity,
- characterized in that**
- the transmitting means is adapted to transmit a control message to the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information to be sent in a retransmission data packet for the unsuccessfully transmitted data packet, and in that
- the receiving means is adapted to receive a retransmission data packet from the transmitting entity comprising an amount of information indicated in said control message.
17. The receiving entity according to claim 16, **characterized in that** the receiving entity comprises means adapted to perform the method according to one of claims 1 to 15.
18. The receiving entity according to claim 16 or 17, **characterized in that** the receiving entity is a base station.

19. A transmitting entity for transmitting data packets to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data, the transmitting entity comprising:

transmitting means for transmitting a data packet from the transmitting entity,
and

receiving means for receiving a feedback message from the receiving entity,
wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity,

characterized in that

the receiving means is adapted to receive a control message at the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information in a retransmission data packet to be sent for the unsuccessfully received data packet, and in that

the transmitting means is adapted to transmit a retransmission data packet to the receiving entity comprising an amount of information indicated in said control message.

20. The transmitting entity according to claim 18, **characterized in that** the transmitting entity comprises means adapted to perform the method according to one of claims 1 to 15.
21. The transmitting entity according to claim 18 or 19, **characterized in that** the transmitting entity is a mobile terminal.
22. A mobile communication system comprising at least one receiving entity according to one of claims 16 to 18 and at least one transmitting entity according to one of claims 19 to 21.
23. A computer-readable medium for storing instructions that, when executed on a processor, cause the processor to control the amount of information in retransmission data packets transmitted from a transmitting entity to a

receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data by:

receiving a data packet from the transmitting entity, and

transmitting a feedback message to the transmitting entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity,

transmitting a control message to the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information to be sent in a retransmission data packet for the unsuccessfully transmitted data packet, and

receiving a retransmission data packet from the transmitting entity comprising an amount of information indicated in said control message.

24. A computer-readable medium for storing instructions that, when executed on a processor, cause the processor to control the amount of information in retransmission data packets transmitted from a transmitting entity to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data by:

transmitting a data packet from the transmitting entity, and

receiving means for receiving a feedback message from the receiving entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity,

receiving a control message to the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information in a retransmission data packet to be sent for the unsuccessfully received data packet, and

transmitting a retransmission data packet to the receiving entity comprising an amount of information indicated in said control message.